UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,707	06/12/2001	Daniel Yellin	10559-449001 / P10766	5530

20985	7590	11/16/2005	EXAMINER

FISH & RICHARDSON, PC
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER
TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2004*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

   4a) Of the above claim(s) *23-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-13,16-19 and 22* is/are rejected.

7)☒ Claim(s) *7,8,14,15,20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1.   Applicant's election without traverse of Group I, Claims 1-22, in Paper No. 11 is

acknowledged.

Claims 23-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as

being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 11.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-22 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

Note: the Examiner maintains 112 rejection of claims 16-18 and 22 from the previous

Office Action filed 05/20/2004.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 16-18 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing

to comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the

invention. Claim 16 is a single means claim. MPEP § 2164.08(a) states A single means

claim, i.e., where a means recitation does not appear in combination with another

recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112,

first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir.

1983) (A single means claim which covered every conceivable means for achieving the

stated purpose was held nonenabling for the scope of the claim because the

specification disclosed at most only those means known to the inventor.).

Note: Claim 16 appears to be preamble with no limitations. Proper indentation is

required if the Applicant intends otherwise to distinguish limitations in the claim

from the preamble.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

4.   Claims 1-6, 9-13, 16-19 and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Kobayashi; Hisashi et al. (US 6029264 A, hereafter referred to as

Kobayashi) in view of Steele; Raymond (US 4393276 A).

35 U.S.C. 103(a) rejection of claims 1, 9 and 16.

Kobayashi teaches receiving a packet of encoded data (Figure 14 B in Kobayashi

teaches a decoder in a receiver for receiving a packet of encoded data); and decoding

the encoded packet using a look-up table that stores information approximating output

of an algorithmic decoding process (col. 6, lines 16-26 in Kobayashi teach that the AZD

unit in Figure 14 B of Kobayashi is a quantizer for assigning an estimate to received

values; col. 8, lines 33-45 and Figure 9B teach that input values are assigned discrete

quantized values based on the value of the input, which is substantially a look-up

means for determining the a quantized value for an input, e.g., if the input lies in the set

D_0, the quantizer assigns the input symbol a quantized value of zero, that is, the AZD

algorithm clearly suggests a look-up algorithm; Note: the quantized value is an estimate

of the output of the algorithmic decoding process and if there is no noise in the

communication channel will be identical to the output of the algorithmic decoding

process; hence Kobayashi teaches decoding the encoded packet using a look-up table

in Figure 9B that stores quantized information approximating output of an algorithmic

decoding process).

However Kobayashi does not explicitly teach the specific use of a look-up table stored

in memory.

Steele, in an analogous art, teaches use of a look-up table stored in memory (col. 5,

lines 23-26 in Steele).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify Kobayashi with the teachings of Steele by including use

of a look-up table stored in memory. This modification would have been obvious to one

of ordinary skill in the art, at the time the invention was made, because one of ordinary

skill in the art would have recognized that use of a look-up table stored in memory

would have provided a well-known means for implementing a quantizer look-up table

(col. 5, lines 23-26 in Steele).

35 U.S.C. 103(a) rejection of claims 2, 11 and 17.

Figure 14B in Kobayashi clearly teaches joint quantization since symbols are quantized

in pairs each element of the pair corresponding to a different encoder.

35 U.S.C. 103(a) rejection of claims 3, 12 and 18.

Col. 12, lines 50-67 in Kobayashi.

35 U.S.C. 103(a) rejection of claims 4, 5 and 10.

See Figure 14B in Kobayashi.

35 U.S.C. 103(a) rejection of claims 6, 13 and 19.

Kobayashi teaches receiving encoded symbols (Figure 14 B in Kobayashi teaches a

decoder in a receiver for receiving a packet of encoded data);·compressing the encoded

symbols to obtain compressed symbols (col. 6, lines 16-26 in Kobayashi teach that the

AZD unit in Figure 14 B of Kobayashi is a quantizer for assigning an guantized estimate

from a finite range of values to a received value that has an infinite range of values, i.e.,

the AZD unit is a compressor compressing the range of values for the input into a finite

value selected from a finite range of values); decoding the compressed symbols using a

first look-up table that stores information approximating output of an algorithmic

decoding process to obtain decoded symbols (Figures 11D and 12C and col. 12, lines

12-16 in Kobayashi teach that a second AZD_2 unit can be inserted in the iterative

decoding process to change the level of quantization; col. 6, lines 16-26 in Kobayashi

teach that the second AZD_2 unit is a quantizer for assigning an estimate to received

values; col. 8, lines 33-45 and Figure 9B teach that input values for the second AZD_2

unit are assigned discrete quantized values based on the value of the input, which is

substantially a look-up means for determining the a quantized value for an input,·e.g., if

the input lies in the set D_0, the quantizer assigns the input symbol a quantized value of

zero, that is, the second AZD_2 algorithm clearly suggests a look-up algorithm; Note: the

quantized value is an estimate of the output of the algorithmic decoding process and if

there is no noise in the communication channel will be identical to the output of the

algorithmic decoding process; hence Kobayashi teaches decoding the encoded packet using a look-up table in Figure 9B that stores quantized information approximating output of an algorithmic decoding process); arithmetically combining the compressed symbols with the decoded symbols to obtain a first result (the E/E Corrector in Figures 111D, 12C and 14B receive decoded symbols from interleavers and quantized compressed values form the initial AZD quantizers and arithmetically combines the values); and decompressing the first result to obtain a decompressed first result (Hard decisions remove the effect of the AZD compression quanitizers to produce exact values; hence hard decision estimating is a means for decompressing).

However Kobayashi does not explicitly teach the specific use of a look-up table stored in memory.

Steele, in an analogous art, teaches use of a look-up table stored in memory (col. 5, lines 23-26 in Steele).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kobayashi with the teachings of Steele by including use of a look-up table stored in memory. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a look-up table stored in memory would have provided a well-known means for implementing a quantizer look-up table (col. 5, lines 23-26 in Steele).

35 U.S.C. 103(a) rejection of claim 22.

See Figure 14B in Kobayashi.

Allowable Subject Matter

5.   Claims 7, 8, 14, 15, 20 and 21 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37
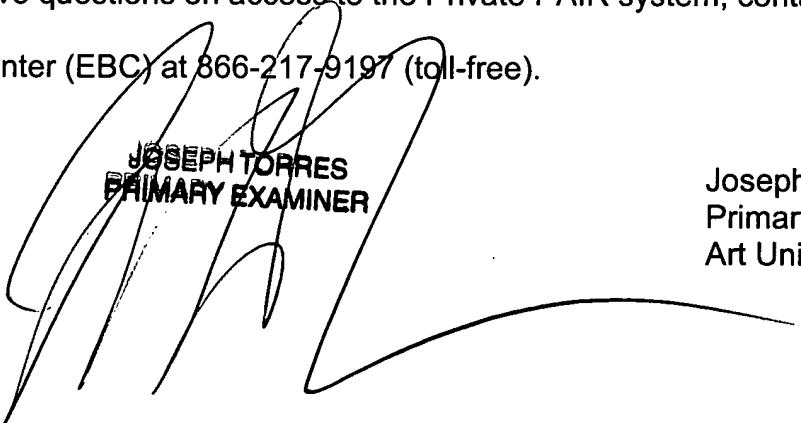
CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joseph D. Torres whose telephone number is (571)

272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

JOSEPH TORRES
PRIMARY EXAMINER

Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133